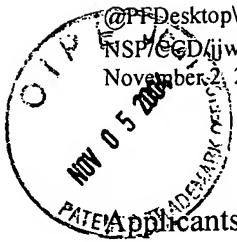


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NSP/CGD(jw/wlm/jam/dc)
November 2, 2004

PATENT APPLICATION
DOCKET NO.: 1021.2005-001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Yi Hua Ma, Ivan P. Mardilovich and Erik E. Engwall
 Application No.: 10/804,846 Group Art Unit: 1724
 Filed: March 19, 2004 Examiner: Not assigned
 Confirmation No.: 7497
 Title: COMPOSITE GAS SEPARATION MODULES HAVING INTERMEDIATE POROUS METAL LAYERS

CERTIFICATE OF MAILING OR TRANSMISSION	
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, or is being facsimile transmitted to the United States Patent and Trademark Office on:	
<u>11-2-04</u>	<u>Carol M. Bowerman</u>
Date	Signature
<u>Carol M. Bowerman</u>	
Typed or printed name of person signing certificate	

INFORMATION DISCLOSURE STATEMENT

Mail Stop Amendment
 Commissioner for Patents
 P.O. Box 1450
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Sir:

This Information Disclosure Statement is submitted:

- under 37 CFR 1.129(a), or
(First/Second submission after Final Rejection)
- under 37 CFR 1.97(b), or
(Within any one of the following time periods: three months of filing national application (other than a CPA) or date of entry of the national stage in an international application; or before the mailing date of a first office action on the merits in a non-provisional application, including a CPA, or a Request for Continued Examination).
- under 37 CFR 1.97(c) together with either:
 - a Statement under 37 CFR 1.97(e), as checked below, or
 - a \$180.00 fee under 37 CFR 1.17(p), or
(After the 37 CFR 1.97(b) time period, but before final action or notice of allowance, whichever occurs first)
- under 37 CFR 1.97(d) together with:
 - a Statement under 37 CFR 1.97(e), as checked below, and
 - a \$180.00 fee under 37 CFR 1.17(p), or
(Filed after final action or notice of allowance, whichever occurs first, but on or before payment of the issue fee)
- under 37 CFR 1.97(l):
 - Applicant requests that the IDS and cited reference(s) be placed in the application filewrapper.
(Filed after payment of issue fee)

Statement Under 37 CFR 1.97(e)

- [] Each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement; or
- [] No item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned, after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

Statement Under 37 CFR 1.704(d) (Patent Term Adjustment)

Applies to original applications (other than design) filed on or after May 29, 2000

- [] Each item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in § 1.56(c) more than thirty days prior to the filing of the Information Disclosure Statement.

[X] Enclosed herewith is form PTO-1449:

- [X] Copies of the cited references (AL-AQ, AR-AZ and AR2) are enclosed.
 - [X] Since this application was filed after June 30, 2003, copies of issued U.S. patents and published U.S. applications are not required and are not being provided.
- [] Copies of the cited references are enclosed except those entered in prior application, U.S. Application No. [], to which priority under 35 U.S.C. 120 is claimed. [The earlier application contains copies of the cited references.]
- [X] The listed references (AE, AG2, AD3, AD4, AE4, AO and AP) were cited in the enclosed International Search Report in a counterpart foreign application.
- [X] The "concise explanation" requirement (non-English references) for references AL, AM, AO and AQ under 37 CFR 1.98(a)(3) is satisfied by:
 - [] the explanation provided on the attached sheet.
 - [] the explanation provided in the Specification.
 - [X] submission of the enclosed International Search Report for references AO and AP.
 - [] submission of the enclosed English-language version of a foreign Search Report and/or foreign Office Action.
 - [X] the enclosed English language abstract for references AL, AM and AQ.

[X] Applicant requests that the following non-published pending applications be considered:

Examiner's
Initials

____ U.S. Patent Application No. 10/804,847 by Yi Hua Ma, Ivan P. Mardilovich and Erik E. Engwall, filed March 19, 2004, Docket No.: 1021.2006-001

____ U.S. Patent Application No. 10/804,848 by Yi Hua Ma, Ivan P. Mardilovich and Erik E. Engwall, filed March 19, 2004, Docket No.: 1021.2004-001

____ U.S. Patent Application No. 10/836,088 by Yi Hua Ma, Ivan P. Mardilovich and Erik E. Engwall, filed April 30, 2004, Docket No.: 1021.2007-001

____ Examiner

____ Date

[X] A copy of each above-cited application, including the current claims, is enclosed.

[] A copy of each above-cited application, including the current claims, is enclosed, except those entered in prior application, U.S. Application No. [], to which priority under 35 U.S.C. 120 is claimed.

The Examiner is requested to return a copy of the above list of pending applications indicating which references were considered with the next office communication.

It is requested that the information disclosed herein be made of record in this application.

Method of payment:

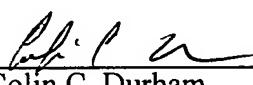
[] A check for the fee noted above is enclosed, or the fee has been included in the check with the accompanying Reply. A copy of this Statement is enclosed.

[] Please charge Deposit Account 08-0380 in the amount of \$[]. A copy of this Statement is enclosed.

[X] Please charge any deficiency in fees and credit any overpayment to Deposit Account 08-0380.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By 
Colin C. Durham
Registration No.: 52,843
Telephone: (978) 341-0036
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Concord, MA 01742-9133

Dated: 11/21/04

PTO-1449 REPRODUCED

INFORMATION DISCLOSURE CITATION
IN AN APPLICATION
November 2, 2004
(Use several sheets if necessary)

ATTORNEY DOCKET NO.
1021.2005-001APPLICATION NO.
10/804,846FIRST NAMED INVENTOR
Yi Hua MaFILING DATE
March 19, 2004EXAMINER
N/ACONFIRMATION NO.
7497GROUP
1724

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	REF. NO.	DOCUMENT NUMBER Number-Kind Code (if known)	ISSUE DATE / PUBLICATION DATE MM-DD-YYYY	NAME OF PATENTEE OR APPLICANT OF CITED DOCUMENT
	AA	2,958,391	11-01-1960	deRosset
	AB	3,241,298	03-22-1966	Pierce
	AC	3,413,777	12-03-1968	Langley, <i>et al.</i>
	AD	3,428,476	02-18-1969	Langley, <i>et al.</i>
	AE	4,496,373	01-29-1985	Behr, <i>et al.</i>
	AF	4,589,891	05-20-1986	Iniotakis, <i>et al.</i>
	AG	5,049,167	09-17-1991	Castro, <i>et al.</i>
	AH	5,139,541	08-18-1992	Edlund
	AI	5,205,841	04-27-1993	Vaiman
	AJ	5,215,729	06-01-1993	Buxbaum
	AK	5,217,506	06-08-1993	Edlund, <i>et al.</i>
	AA2	5,258,339	11-02-1993	Ma, <i>et al.</i>
	AB2	5,259,870	11-09-1993	Edlund
	AC2	5,358,553	10-25-1994	Najjar, <i>et al.</i>
	AD2	5,393,325	02-28-1995	Edlund
	AE2	5,451,386	09-19-1995	Collins, <i>et al.</i>
	AF2	5,449,848	09-12-1995	Itoh
	AG2	5,498,278	03-12-1996	Edlund
	AH2	5,614,001	03-25-1997	Kosaka, <i>et al.</i>
	AI2	5,652,020	07-29-1997	Collins, <i>et al.</i>
	AJ2	5,672,388	09-30-1997	McHenry, <i>et al.</i>
	AK2	5,738,708	04-14-1998	Peachey, <i>et al.</i>
	AA3	5,782,959	07-21-1998	Yang, <i>et al.</i>
	AB3	5,782,960	06-21-1998	Ogawa, <i>et al.</i>
	AC3	5,904,754	05-18-1999	Juda, <i>et al.</i>
	AD3	6,152,987	11-28-2000	Ma, <i>et al.</i>

EXAMINER

DATE CONSIDERED

PTO-1449 REPRODUCED			ATTORNEY DOCKET NO. 1021.2005-001	APPLICATION NO. 10/804,846	
INFORMATION DISCLOSURE CITATION IN AN APPLICATION			FIRST NAMED INVENTOR Yi Hua Ma	FILING DATE March 19, 2004	
November 2, 2004 (Use several sheets if necessary)			EXAMINER N/A	CONFIRMATION NO. 7497	GROUP 1724

U.S. PATENT DOCUMENTS

EXAM- INER INI- TIAL	REF. NO.	DOCUMENT NUMBER Number-Kind Code (if known)	ISSUE DATE / PUBLICATION DATE MM-DD-YYYY	NAME OF PATENTEE OR APPLICANT OF CITED DOCUMENT
	AE3	6,152,995	11-28-2000	Edlund
	AF3	6,183,542	06-06-2001	Bossard
	AG3	6,267,801	07-31-2001	Baake, <i>et al.</i>
	AH3	6,372,363	06-16-2002	Krueger
	AI3	6,379,524 B1	04-30-2002	Lee, <i>et al.</i>
	AJ3	6,419,728	06-12-2002	Edlund
	AK3	6,475,268	11-05-2002	Thornton
	AA4	6,547,858	04-15-2003	Edlund, <i>et al.</i>
	AB4	6,596,057	07-22-2003	Edlund, <i>et al.</i>
	AC4	US2002/0083829	07-04-2002	Edlund, <i>et al.</i>
	AD4	US2002/020298 A1	02-21-2002	Ernst, <i>et al.</i>
	AE4	US2002/164496 A1	11-07-2002	Mahmood, <i>et al.</i>

EXAMINER	DATE CONSIDERED
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INFORMATION DISCLOSURE CITATION IN AN APPLICATION November 2, 2004 (Use several sheets if necessary)	ATTORNEY DOCKET NO. 1021.2005-001	APPLICATION NO. 10/804,846
	FIRST NAMED INVENTOR Yi Hua Ma	FILING DATE March 19, 2004
	EXAMINER N/A	CONFIRMATION NO. 7497
		GROUP 1724

FOREIGN PATENT DOCUMENTS

EXAMINER	DATE CONSIDERED
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PTO-1449 REPRODUCED INFORMATION DISCLOSURE CITATION IN AN APPLICATION November 2, 2004 (Use several sheets if necessary)		ATTORNEY DOCKET NO. 1021.2005-001	APPLICATION NO. 10/804,846
		FIRST NAMED INVENTOR Yi Hua Ma	FILING DATE March 19, 2004
		EXAMINER N/A	CONFIRMATION NO. 7497
			GROUP 1724

OTHER DOCUMENTS (*Including Author, Title, Date, Pertinent Pages, Etc.*)

AR	Gryaznov, V. M., "Metal Containing Membranes for the Production of Ultrapure Hydrogen and the Recovery of Hydrogen Isotopes," <i>Separation and Purification Methods</i> (now <i>Separation and Purification Reviews</i>), 29(2):171-187 (2000).
AS	Gryaznov, V. M., <i>et al.</i> , "Preparation and catalysis over Palladium Composite Membranes," <i>Applied Catalysis A: General</i> , 96:15-23 (1993).
AT	Ma, Y. H., <i>et al.</i> , "Characterization of Intermetallic Diffusion Barrier and Alloy Formation for Pd/Cu and Pd/Ag Porous Stainless Steel Composite Membranes," <i>I & EC Research</i> , 43:2936-2945 (2004).
AU	Ma, Y. H., <i>et al.</i> , "Thin Composite Palladium and Palladium/Alloy Membranes for Hydrogen Separation," <i>Ann. N.Y. Acad. Sci.</i> , 984:346 (2003).
AV	Mardilovich, I. P., <i>et al.</i> , "Dependence of Hydrogen Flux on The Pore Size and Plating Surface Topology of Asymmetric Pd-Porous Stainless Steel Membranes," <i>Desalination</i> , 144:85-89 (2002).
AW	Nam, S.-E., <i>et al.</i> , "Hydrogen Separation by Pd Alloy Composite Membranes," <i>J. Membrane Sci.</i> , 192:177-185 (2001).
AX	Ozaki, T., <i>et al.</i> , "Preparation of Palladium-coated V and V-15 Ni Membranes for Hydrogen Purification by Electroless Plating Technique," <i>Int. J. Hydrogen Energy</i> , 28:297 (2003).
AY	Roa, F., "Preparation and Characterization of Pd-Cu Composite Membranes for Hydrogen Separation," <i>Chem. Eng. J.</i> , 93:11 (2003).
AZ	Roa, F., <i>et al.</i> , "The Influence of Alloy Composition on The H ₂ Flux of Composite Pd-Cu Membranes," <i>Desalination</i> , 147:411-416 (2002).
AR2	Shu, J., <i>et al.</i> , "Structurally Stable Pd-Ag Alloy Membranes: Introduction of a Diffusion Barrier," <i>Thin Solid Films</i> , 286:72-79 (1996).

EXAMINER	DATE CONSIDERED
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